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Notes on the Jack Pine Plains of Michigan

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The Jack Pine Plains or Barrens of Michigan, like analogous regions elsewhere, are of considerable interest to botanists. That they are barren from the agricultural point of view is shown clearly by the number of abandoned farms in their outskirts and the total lack of farming population in their typically developed interiors. However, the word barren, without modification, should not be applied to the Pine Plains, for in them some plants reach their very acme of development. For example the jack pine, *Pinus Banksiana*, the characteristic tree of the Plains, unhurt by fire for a sufficient time, makes a noble forest. Such crops of blueberries and pin and choke cherries as are produced on the Plains are exceeded nowhere; the writer saw numerous choke cherry trees with branches bent to the ground with their loads of fruit. Botanists have reason to be thankful that the Plains are barren agriculturally, for to this fact is due their preservation in something like their natural state; and they harbor numbers of the most interesting plants of Michigan.

The characteristic plants of the Jack Pine Plains have been listed at least thrice;* the object of the present article, therefore, is not to catalogue the plants of the Plains, but rather to give an idea of the appearance of the region in general, and to indicate the nature of certain subordinate plant associations of the Plains.

Why the Jack Pine Barrens are called Plains is not apparent at first sight in some parts of the region; certainly in the Boardman Plains, Grand Traverse County, ravines are numerous and there are many basins containing lakes, some of which are deep. However, there are extensive areas of fairly level country and the region no doubt is a dissected plateau. In Crawford County there are larger, essentially flat areas, but there are also long but low parallel ridges.

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* Beal, W. J. 18th Ann. Rep. Hort. Soc. Michigan 1888: 52–54. 1889. Beal, W. J., & Wheeler, C. F. Michigan Flora (second edition). 30th Ann. Rep. Sec'y State Bd. Agr. 1892: 19–21. Beal, W. J. Michigan Flora (third edition). Fifth Rep. Michigan Ac. Sci. 1904: 16–18.

As in the case of other regions in the eastern United States called Barrens, the distinctive appearance of the Jack Pine Plains is due chiefly to unusually wide spacing of the arborescent vegetation, giving a pleasing open effect to the landscape. Upon closer inspection the humbler vegetation also is seen to leave an unusual proportion of soil surface uncovered. There is no turf, there are no thickets; to this extent then, the region is barren, even to its specially adapted inhabitants.

So far as seen by the writer the Michigan Plains may be divided into three types, grading in intensity toward the typical Jack Pine country. Chiefly about the margins of the Plains, but scattered elsewhere, are areas where the dominant tree growth is oaks and maples. In this type, pin and choke cherries, witch-hazel and willow are most abundant; all of these plants are scattered also in the other types. A second type of barren is dominated by two species of aspen, *Populus tremuloides* and *P. grandidentata*, and is better supplied with sand cherry, service berry and choke berry than the other divisions. The third and most characteristic type of barren is that dominated by the Jack Pine; it appears to have more bear-berry, New Jersey tea and bush honeysuckle, also, than the other types.

However, the undergrowth in all of these types of Plains is very similar. Brake, sweet fern, and blueberries are the dominant ground cover; under and between them are scattered, more commonly than other things, the following: trailing arbutus, wintergreen, ground pine (*Lycopodium complanatum* and *L. clavatum*) and reindeer "moss" (*Cladonia*). The keynote of the Plains vegetation is resistance to drought and fire. Most of the plants have long deep roots or persistent rootstocks, and Dr. Beal notes that of seventy of the most common plants, sixty-eight are perennials. There are few biennials and the only annuals seen in the Plains are scattered specimens of widespread weeds, which are introduced to some extent wherever man and his domestic animals penetrate.

As a contribution to a future complete enumeration of the Plains flora the following lists of plants collected or observed at various points are presented:

Boardman Plains, Grand Traverse County

August 23 and 26; September 2, 1919

Pteris aquilina, dominant
Lycopodium clavatum, common
Lycopodium complanatum, common
Pinus Banksiana, dominant
Danthonia spicata, the most common grass
Smilacina racemosa, uncommon
Unifolium canadense, scattered
Comptonia asplenifolia, common, sometimes dominant
Quercus alba, scattered
Quercus velutina, scattered
Polygonella articulata, common
Silene antirrhina, numerous in one weedy locality
Fragaria virginiana, common
Amelanchier sanguinea, scattered
Crataegus macrosperma, scattered
Prunus virginiana, scattered
Acer saccharinum, scattered
Ceanothus americanus, scattered in colonies
Helianthemum canadense, scarce
Epilobium angustifolium, common.
Oenothera biennis, one basal rosette seen
Chimaphila umbellata, scattered
Epigaea repens, common
Gaultheria procumbens, common
Arctostaphylos Uva-ursi, scattered in colonies
Vaccinium pennsylvanicum, dominant
Vaccinium ovalifolium, one large colony seen
Asclepias tuberosa, scarce and local
Melampyrum lineare scattered
Diervilla Diervilla, common
Campanula rotundifolia, sparsely distributed
Solidago hispida, fairly common
Solidago serotina, a few specimens, evidently introduced
Aster undulatus, common
Leptilon canadense, appearing sparsely as a weed
Laciniaria "scariosa" group,[1] sparsely distributed
Anaphalis margaritacea, uncommon
Krigia virginica, fairly common
Picris hieracioides, scattered
Hieracium scabrum, common
Hieracium venosum, common
Lactuca canadensis, appearing sparsely as a weed

In more or less aquatic situations in this region, but not belonging to the plains, which are dry, the following plants of interest were observed or collected:

Shores

Ibidium cernuum
Parnassia caroliniana
Dasiphora fruticosa
Argentina Anserina
Sanguisorba canadensis
Ledum groenlandicum
Andromeda glaucophylla
Chamaedaphne calyculata
Gentiana Saponaria
Chelone glabra
Aster Tradescanti

Marshes

Dulichium arundinaceum
Eleocharis tenuis
Scirpus heterochaetus
Rhynchospora alba
Cladium mariscoides
Juncus brevicaudatus
Juncus canadensis
Polygonum amphibium
Sarracenia purpurea
Epilobium lineare
Cicuta bulbifera
Agalinis paupercula
Campanula aparinoides
Lobelia spicata
Bidens cernua

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[1] Which includes numerous undescribed species.

Lakes

Potamogeton natans[1]
P. amplifolius
P. heterophyllus
P. perfoliatus
P. foliosus
P. pectinatus
Naias flexilis
Zizania aquatica[1]
Scirpus subterminalis
Nymphaea advena
Castalia odorata

Rivers

Potamogeton interruptus
Naias flexilis
Veronica Anagallis-aquatica

Manistee Plains, Crawford County

August 29 to September 1, 1919

Pteris aquilina, dominant.
Unifolium canadense, common
Populus grandidentata, common
Populus tremuloides, dominant
Comptonia asplenifolia, dominant
Aronia melanocarpa, scattered in colonies
Amelanchier sanguinea, scattered
Prunus pennsylvanica, common
Prunus pumila, scattered in large colonies
Prunus virginiana, common
Acer saccharinum, common
Epilobium angustifolium, common
Vaccinium canadense, dominant
Vaccinium nigrum, common
Melampyrum lineare, scattered in large colonies
Diervilla Diervilla, scattered in colonies
Campanula rotundifolia, scattered
Solidago hispida, common
Solidago nemoralis, common
Solidago puberula, common
Aster laevis, scattered
Erigeron ramosus, scarce
Carduus lanceolatus, about camp sites as a weed
Picris hieracioides, scattered
Hieracium scabrum, common
Hieracium venosum, scattered

In wetter situations along the Manistee River were observed or collected the following additional plants of interest:

Clintonia borealis
Castilleja coccinea
Ledum groenlandicum
Aster puniceus
Aster sagittifolius

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[1] Quantities of these plants have been transplanted to the lakes examined; *Chara*, *Myriophyllum* and *Utricularia*, not identified specifically, also were present.